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DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER DIVISION
Offsite Inspection and Testing Section

City of Las Vegas
Material Qualification – Aggregate Base Material (with RAP)
Procedure No. PWOIT-MT 109

The City of Las Vegas (CLV) is a member of the Interagency Quality Assurance Committee (IQAC). The CLV has adopted the included IQAC Policy "Material Qualification – Aggregate Base", effective date of April 1, 1999. The IQAC does not review / approve Aggregate Base Materials containing Recycled Asphaltic Pavement (RAP) aggregates. The review / approval process of base materials containing RAP is entity specific. The City of Las Vegas will allow the use of Aggregate Base Materials containing (RAP) as outlined below.

1.0 PURPOSE: This procedure is to outline the current CLV policy and procedure for qualification, and Quality Assurance (QA) sampling and testing of Type 2 Aggregate Base Materials containing a blend of **70% (minimum)** virgin aggregates and **30% (maximum)** recycled asphaltic pavement (RAP) aggregates. The mean oil content shall be 1.2% with a +0.3% tolerance. The Total Oil Content of the RAP **shall not exceed 1.5%**. Please note that final acceptance of materials will be based upon the material sampled in-place at the project site, per section 106 of the Standard Specifications.

1.1 Each individual location or "pit" shall be referred to as a "source".

1.2 The maximum qualification period is six (6) months for aggregates base materials blended with Recycled Asphalt Pavement (RAP) aggregates. The entire qualification process must be completed prior to the first day of April and the first day of October of each calendar year.

2.0 REFERENCE CODES AND STANDARDS:

2.1 Clark County Uniform Standard Specification

2.1.1 Section 106, "Control of Materials"

2.1.2 Section 208 "Trench Excavation and Backfill",

2.1.3 Section 302 "Aggregate Base Courses",

2.1.4 Section 704 "Base Aggregates"

2.2 Other:

2.2.1 NRS 338.176, NAC 625.550,

2.2.2 The most current ASTM, AASHTO, NDOT test procedures as indicated in the applicable sections of the Uniform Standard Specifications.

3.0 STATEMENT OF POLICY:

3.1 SUBMITTAL

- 3.1.1** Submittal format shall be completed in accordance with the current CLV procedure and in compliance with the NRS 338.176 and NAC 625.550 statutes.
- 3.1.2** The Supplier or their representative shall submit a transmittal letter and Type 2 materials report to the CLV for review and approval. The transmittal shall be submitted and approved prior to the utilization of the material. The CLV must receive the transmittal within twenty-one (21) days of the sampling. When "no exceptions" are taken, the CLV will approve the use of the material within the boundaries of the CLV.
- 3.1.3** Notification of samples not in compliance with the Standard Specifications is required; however, a report is not. Samples without notification, or a qualification submittal within the 21-day period, will be considered, by the CLV, to be outside of the Standard Specifications and require re-sampling and testing.

4.0 REPORT:

- 4.1** The report must be prepared by, or the direction of a Professional Engineer registered in the State of Nevada. The Report shall be on a standard form¹ generated by the CLV, include a graphical representation of the "Proctor" value(s), and include the pit name and location. The report must be signed and stamped by the responsible engineer.
- 4.2** Discrepancies between test results will be reviewed on a case-by-case basis. The CLV will notify the Supplier of substantial test variation within 10 days of receipt of the qualification submittal.
- 4.3** The Report shall include, at a minimum, the following information:
 - 4.3.1** Sieve Analysis
 - 4.3.1.1** Virgin Aggregate (% of Blend)
 - 4.3.1.2** RAP (% of Blend)
 - 4.3.1.3** Blended Aggregates
 - 4.3.2** RAP % Oil Content
 - 4.3.3** Liquid Limit (blend)
 - 4.3.4** Plasticity Index (blend)
 - 4.3.5** Fractured Faces (blend)
 - 4.3.6** Percentage Wear (blend)
 - 4.3.7** Resistance (R Value) (blend)
 - 4.3.8** Total Available Water Soluble Sodium Sulfate (blend)
 - 4.3.9** Proctor values with curve and rock correction (blend)
 - 4.3.10** Report stamped by the Professional Engineer of record

- 4.4 If testing is provided by another laboratory, that data shall be stamped by the laboratory engineer and included in the report.

5.0 SAMPLING AND TESTING:

5.1 Materials shall be sampled and tested as follows:

- 5.1.1 The Supplier or their representative shall notify CLV a minimum of 24 hours prior to obtaining the sample. Sampling must be performed during normal working hours.
- 5.1.2 All samples of aggregate base for Bi-Annual Qualification shall be "cut" from the "belt". When circumstances do not allow for sampling during production, the supplier / representative must coordinate with the CLV representative to identify an alternative plan for sampling.
- 5.1.3 Samples shall be taken from the pit processed RAP pile for additional Oil Content and Sieve Analysis testing.
- 5.1.4 An approved testing laboratory shall obtain a sufficient size samples for splitting and testing. A CLV representative shall be present at the time the samples are obtained and a split of the samples shall be provided to the CLV representative for testing.
- 5.1.5 If CLV personnel are not present during the sampling and splitting of the materials, the results of the sample will not be accepted.

5.2 The most current AASHTO, ASTM, NDOT test procedures shall be used. Testing requirements shall be from the applicable sections of the Standard Specifications.

5.3 The AASHTO Methods T180 and T224 (as applicable) shall be used for the moisture-density value.

5.4 Approval to use the material, as Type 2 Aggregate Base containing RAP, does not constitute acceptance of the material. All construction materials are subject to inspection and / or testing by the responsible agency personnel. Any material that does not conform to the engineering characteristics of those materials approved for use shall be removed and replaced with acceptable material.

6.0 QUALITY ASSURANCE (QA) TESTING:

- 6.1 The CLV will perform QA testing of the aggregate produced at that pit location. The frequency of QA testing for aggregate blended with recycled asphalt pavement (RAP) will be on a random basis or a minimum of two (2) samples per approval period.
- 6.2 One of the samples will be the Bi-Annual sample. The remaining samples may be taken at any time during the approval period time frame at the discretion of the CLV from the pit or project location.
- 6.3 Should the responsible CLV find test results, which do not meet specifications, the other members of the aggregate producer shall be notified. The CLV may accommodate minor adjustments for "tuning" of an operation during normal operations. This courtesy shall not be extended during the Bi-Annual Qualification process. CLV shall determine the course of action required for these samples.

7.0 EFFECTIVE DATE AND APPROVALS:

EFFECTIVE DATE: January 1, 2011



12-3-10

Tom E. Hayes, P.E.

Date

City of Las Vegas

Land Development and Offsite Inspection and Testing Manager



12-3-10

Gary G. Johnson, S.E.T.

Date

City of Las Vegas

Construction Testing Supervisor

Attachment 1

City of Las Vegas Standard Form for Type II Aggregate Base Containing RAP Submittal Form

Aggregate Producer Name: _____

Pit Name: _____

General Location (i.e. cross streets): _____

Date Sampled: _____

Legal Description: _____

Section: _____ Township: _____ Range: _____

Sieve Analysis					Test Name	Test Results	Specification
Sieve Size	Virgin Aggregate _____ (%)	RAP _____ (%)	Blend	Specification (%)	Moisture-Density Relationship		AASHTO T180
1"				100	Maximum Density(pcf)		Nearest Whole Number
3/4"				90-100	Optimum Moisture (%)		Nearest Whole Number
1/2"				-	RAP % Oil Content		1.5% Maximum
3/8"				-	Percent Wear		45% Maximum
No. 4				35-65	Fractured Faces (%)		70% Maximum
No. 8				-	Plasticity Index		* Maximum From Table 3
No. 16				15-40	Liquid Limit		35% Maximum
No. 30				-	Resistance (R value)		78 Minimum
No. 50				-	Sp. Gravity of +3/4"		-
No. 100				-	Total Available Water Soluble Sodium Sulfates		0.3 Maximum
No. 200				2-10	USCS Classification		-
* Section 704.03.01 Standard Specifications					Color		-

A graph of the Moisture-Density Relationship must be attached

Submitted By: _____ P.E. Stamp:
(Signature)

(Print Name)

(Title)